

Claims

1. Steam generator (1) in which an evaporator/once-through heating area (8) is disposed within a heating-gas duct (6) through which a heating gas can flow in an approximately horizontal direction (x), said evaporator/once-through heating area (8) comprising a number of steam-generator tubes (12) which are connected in parallel and through which a flow medium (D,W) can flow and being configured such that a steam-generator tube (12) which is heated to a greater extent compared with a further steam-generator tube (12) of the same evaporator/once-through heating area (8) has a higher throughput of the flow medium (W) than said further steam-generator tube (12), characterized in that a discharge collector (20) which is connected downstream of the steam-generator tubes (12) of the evaporator/once-through heating area (8) on the flow-medium side, is oriented with its longitudinal axis essentially parallel to the heating-gas direction (x).
2. Steam generator (1) according to Claim 1, wherein the respective discharge collector (20) is fashioned essentially as a cylindrical body.
3. Steam generator (1) according to Claim 1 or 2, the evaporator/once-through heating area (8) of which comprises a number of tube layers (14) arranged one behind one another, viewed in the heating-gas direction (x), each of which tube layers is formed from a number of steam-generator tubes (12) arranged side-by-side, viewed in the heating-gas direction (x).
4. Steam generator (1) according to Claim 3, to the evaporator/once-through heating area (8) of which is assigned a number, corresponding to the number of steam-generator tubes (12) in each tube layer (14), of discharge collectors (20),

oriented with their longitudinal axis essentially parallel to the heating-gas direction (x), whereby one steam-generator tube (12) of each tube layer (14) discharges into each discharge collector (20).

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5. Steam generator (1) according to any one of Claims 1 to 4, downstream of the evaporator/once-through heating area (8) of which a further evaporator/once-through heating area (10) is disposed on the flow-medium side.

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6. Steam generator (1) according to Claim 5, the further evaporator/once-through heating area (10) of which comprises a number of steam-generator tubes (22) which are connected in parallel and through which a flow medium (D, W) flows and is configured such that a steam-generator tube (22) which is heated to a greater extent compared with a further steam-generator tube (22) of said further evaporator/once-through heating area (10) has a higher throughput of the flow medium (D, W) compared with said further steam-generator tube (22).

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7. Steam generator (1) according to Claims 5 or Claim 6, wherein the steam-generator tubes (22) forming the further evaporator/once-through heating area (10) each have a downtake section (32) which is disposed approximately vertically and through which the flow medium (W) can flow in a downward direction, and an uptake section (34) which is connected downstream of said downtake section on the flow-medium side, which is disposed approximately vertically and through which the flow medium (W) can flow in an upward direction.

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8. Steam generator (1) according to any one of Claims 5 to 7, the evaporator/once-through heating area (8) of which is dimensioned such that, during operation, the flow medium (D, W) flowing into the further once-through heating area (10) connected downstream thereof has a flow velocity greater than the minimum velocity required in order to carry along any steam bubbles present there.

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9. Steam generator (1) according to any one of Claims 5 to 8, wherein the discharge collector (20) or each discharge collector (20) of the evaporator/once-through heating area (8) is integrated in a structural unit (40) with a respectively assigned entry collector (24) of the further once-through evaporating heating unit (10) connected downstream on the flow-medium side.
10. Steam generator (1) according to any one of Claims 5 to 9, the discharge collector(s) (20) of which is/are disposed above the heating-gas duct (6).
11. Steam generator (1) according to any one of Claims 1 to 10, upstream of which a gas turbine is connected on the heating-gas side.